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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,935	02/02/2004	John Shi Sun Wei	10030963-1	9607

7590 06/23/2005

AGILENT TECHNOLOGIES, INC.
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EXAMINER	
MALSAWMA, LALRINFAMKIM HMAR	
ART UNIT	**PAPER NUMBER**
2823	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

Office Action Summary	Application No.	Applicant(s)	
	10/769,935	WEI ET AL.	
	Examiner	Art Unit	
	Lex Malsawma	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *10-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-9, drawn to a method for forming a component, classified in class 438, subclass 411+.

   II. Claims 10-16, drawn to a component, classified in class 257, subclass 678+.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions in Groups I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the component in Group II could be made by another and materially different process. For example, the component in Group II could be formed by bonding a solid, dome-shaped, metallic/insulating cap onto a substrate, wherein the dome-shaped cap is a top substructure, which provides the air-dome structure; and etching a set of gaps into the top substructure (i.e., into to dome-shaped cap). Note that the method in Group I requires forming the top substructure onto a layer of dielectric material; forming a set of gaps into the top substructure; and removing the layer of dielectric material underneath the top substructure, thereby providing the air-dome structure. Therefore, the inventions in Groups I and II are distinct.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Paul Horstmann (Reg. No. 36,167) on June 15, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claims 3-9 are objected to because of the following informalities:

At claim 3, in lines 5 and 7, the examiner suggests changing "photo-resist" to "dielectric material" (as recited in line 3), otherwise there would be a lack of antecedent basis.

At claim 9, in the last line, the examiner suggests changing "photo-resist" to "dielectric material" (as recited in line 3 of claim 3).

Claims 3 and 9 are interpreted as suggested above.

Claims 4-8 are objected to because they depend from claim 3.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hause et al. (5,953,626; hereinafter "**Hause**").

Regarding claims 1-5, 8 and 9:

Hause discloses a method for forming a component, comprising the steps of:

forming a set of substructures (116, 132, 134) for the component (Fig. 8);

forming an air-dome structure (Fig. 14) that encloses the substructures and that provides air spaces (i.e., forming air spaces between pillars "132" and "134", note Figs. 12-14) for providing isolation among the substructures, wherein

the step for forming air spaces (between pillars "132" and "134") includes the steps of:

depositing a layer of dielectric material 138 (e.g., porous oxide, note Col. 4, lines 44-46; and Col. 9, lines 26-28);

forming a top substructure 140 (Fig. 12) onto the layer of dielectric material 138, wherein the top substructure is shaped to impede the overcoat 144 from entering the air spaces

(note Fig. 14) and the step of shaping the top substructure comprises (and depends on) properly shaping the layer of dielectric material 138 by a planarizing step (note Figs. 11-12 and Col. 9, lines 28-34), i.e., material 138 must shaped/planarized such that the top-substructure 140 can be shaped-and-positioned onto layer "136" (note Figs. 12-13);

forming a set of gaps 142 in the top substructure 140 (Fig. 12);

removing the layer of dielectric material 138 (Figs. 12-13) underneath the top substructure 140; and

depositing an overcoat 144 (of dielectric material) on the top substructure 140 such that the overcoat seals the gaps and encloses the air spaces (Fig. 14 and Col. 9, lines 58-62). Therefore, Hause anticipates these claims.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hause** (5,953,626) in view of **Wollesen** (5,900,668).

Regarding claim 6:

Hause anticipates the method of claim 4 but **lacks** depositing a plastic material. Wollesen **teaches** that it is/was conventional in the art to plastically encapsulate a device that has air spaces (note Col. 5, lines 38-42). It would have been obvious to one of ordinary skill in the art to modify Hause by specifically recited that the step of depositing an overcoat includes depositing a plastic material because Wollesen teaches/shows that a completed device, formed by practicing Hause's method, would typically include a step of plastic encapsulation, wherein performing a step of plastic encapsulation would result in depositing a plastic material on the capping layer 144 (in Hause); accordingly, a typical process for acquiring a completed device (by Hause's method) would comprise a step of depositing an overcoat that further includes depositing a plastic encapsulating material.

Regarding claim 7:

Hause anticipates the method of claim 4 but **lacks** specifically utilizing an organic material for the overcoat; however, note that Hause discloses the overcoat 144 is an oxide (note Col. 9, lines 60-63). Wollesen is **cited only to show** (Col. 6, lines 34-39) that organic materials such as spin-on glass (SOG) are very well known dielectrics commonly used in the art (note that SOG is an oxide). Since SOG is a well-known organic oxide material and Hause discloses the

claimed invention except for specifically using an organic material for the oxide 144, it would have been obvious to one of ordinary skill in the art to modify Hause by specifically using an organic material (such as SOG) for the oxide 144 because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In other words, utilizing SOG for the oxide 144 would have been an obvious matter of selecting a well-known organic oxide material that would be functionally equivalent to Hause's oxide 144.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references listed on the attached From PTO-892 (not cited above) are cited to show methods for forming components with air spaces having similarities with that of the current invention.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lex Malsawma whose telephone number is 571-272-1903. The examiner can normally be reached on Mon. - Thur. (4-12 hours between 5:30AM and 10 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lex Malsawma

June 21, 2005